TECHNIQUES ALLOWING ACTIVATION AND DEACTIVATION OF NODES IN A NETWORK

TECHNICAL FIELD

[0001] This invention relates generally to wireless communications and, more specifically, to activating and deactivating nodes in a wireless communication network.

BACKGROUND

[0002] This section is intended to provide a background or context to the invention disclosed below. The description herein may include concepts that could be pursued, but are not necessarily ones that have been previously conceived, implemented or described. Therefore, unless otherwise explicitly indicated herein, what is described in this section is not prior art to the description in this application and is not admitted to be prior art by inclusion in this section.

[0003] A wireless sensor network (WSN) is a network of spatially distributed, typically autonomous sensors (commonly called "nodes", although a node might be connected to multiple sensors) to monitor physical or environmental conditions, such as temperature, sound, pressure, and the like. The nodes pass their data through the network generally to a main location, i.e., to a sink node. Such networks are used in many industrial and consumer applications, such as industrial process monitoring and control, machine health monitoring, health care monitoring, and area monitoring.

[0004] WSNs may occur in cellular systems, which means that the nodes are under control (at least in part) of base stations in the cellular systems. Thus, information to be transmitted or received between nodes may have to go through or be controlled by a base station. Such systems could be improved in certain situations, as described in more detail below.

SUMMARY

[0005] This section contains examples of possible implementations and is not meant to be limiting.

[0006] In an exemplary embodiment, a method includes determining at a source node in a wireless network that at least one target node should be one of activated or deactivated. The method includes sending one or more messages from the source node toward a base station providing wireless access for nodes to the wireless network, wherein the one or more messages comprise an identification of the at least one target node and are configured to indicate that the at least one target node should be one of activated or deactivated. Additionally, the source and target nodes may be sensor nodes in a wireless sensor network.

[0007] An exemplary apparatus includes one or more processors and one or more memories including computer program code. The one or more memories and the computer program code are configured to, with the one or more processors, cause the apparatus to perform at least the following: determining at a source node in a wireless network that at least one target node should be one of activated or deactivated; and sending one or more messages from the source node toward a base station providing wireless access for nodes to the wireless network, wherein the one or more messages comprise an identification of the at least one target node and are configured to indicate that the at least one target node should be one of activated or deactivated.

[0008] An apparatus comprises: means for determining at a source node in a wireless network that at least one target node should be one of activated or deactivated; and means for sending one or more messages from the source node toward a base station providing wireless access for nodes to the wireless network, wherein the one or more messages comprise an identification of the at least one target node and are configured to indicate that the at least one target node should be one of activated or deactivated.

[0009] An additional exemplary embodiment includes a computer program, comprising code for determining at a source node in a wireless network that at least one target node should be one of activated or deactivated; and code for sending one or more messages from the source node toward a base station providing wireless access for nodes to the wireless network, wherein the one or more messages comprise an identification of the at least one target node and are configured to indicate that the at least one target node should be one of activated or deactivated; when the computer program is run on a processor. The computer program according to this paragraph, wherein the computer program is a computer program product comprising a computer-readable medium bearing computer program code embodied therein for use with a computer.

[0010] An exemplary computer program product includes a computer-readable storage medium bearing computer program code embodied therein for use with a computer. The computer program code includes: code for determining at a source node in a wireless network that at least one target node should be one of activated or deactivated; and code for sending one or more messages from the source node toward a base station providing wireless access for nodes to the wireless network, wherein the one or more messages comprise an identification of the at least one target node and are configured to indicate that the at least one target node should be one of activated or deactivated.

[0011] Another exemplary method includes receiving at a base station one or more messages from a source node, wherein the base station provides wireless access for nodes to a wireless network. The one or more messages comprise an identification of at least one target node and are configured to indicate that the at least one target node should be one of activated or deactivated. The method includes sending a message toward each of the at least one target nodes indicating that the target node should be the one of activated or deactivated. The source and target nodes may be sensor nodes in a wireless sensor network.

[0012] An exemplary apparatus includes one or more processors and one or more memories including computer program code. The one or more memories and the computer program code are configured to, with the one or more processors, cause the apparatus to perform at least the following: receiving at a base station one or more messages from a source node, wherein the base station provides wireless access for nodes to a wireless network, wherein the one or more messages comprise an identification of at least one target node and are configured to indicate that the at least one target node should be one of activated or deactivated; and sending a message toward each of the at least one target nodes indicating that the target node should be the one of activated or deactivated.